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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/645,646	08/24/2000	Shinichiro Hayashi	13041.5US01	3347
23552	7590	10/13/2004	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			VO, HAI	
			ART UNIT	PAPER NUMBER
			1771	

DATE MAILED: 10/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/645,646

Applicant(s)

HAYASHI ET AL.

Examiner

Hai Vo

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3,6-30 and 37 is/are pending in the application.
- 4a) Of the above claim(s) 27-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3,6-26,30 and 37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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1. The art rejections over Noboru (JP 08-258493) with regard to claims 3, 6-21, 23-26 and are withdrawn in view of the present amendment. Noboru's skeleton structure is made of a porous inorganic material which is chemically different from a porous organic polymer of the skeleton structure as recited in the claims. However, upon further consideration, new grounds of rejections are made in view of Toyosawa et al (US 5,716,997), Shimizu et al (US 4,911,974) and Giez et al (US 5,366,999).
2. The art rejections over Noboru (JP 08-258493) with regard to claim 22 are maintained.
3. The art rejections over Imashiro et al (US 5,413,853) are maintained.
4. The claim objections are withdrawn in view of the present amendment.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 22 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claim recites "an eraser" having certain physical properties. However, the claim is completely silent as to the structure of the eraser and/or the chemical composition from which the eraser is made as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention.

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7. Claim 22 is rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The organic porous skeleton structure with a skeleton portion and a void portion; and the void portion filled with an elastic material are critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 3, 6-21, 23-26, 30, and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 26 and 37 contain improper Markush language. Claim 26, line 4 and claim 37, line 5, the term "or" should be deleted and replaced with --and--.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 3, 6-21, 26, 30 and 37 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Toyosawa et al (US 5,716,997). Toyosawa teaches a polymeric reticulated structure comprising a three-dimensional continuous network having strands of the copolymer connected to define internal cells which communicate with each other, and the cells filled with a functional material such as a thermoplastic or thermosetting resin (column 12, lines 33-37 and figure 1). The cells have a circular cross section as shown in figure 1. The open celled structure with the individual cells being defined by a plurality of mutually connected, three dimensionally branched webs indicates a reticulated foam material. The three-dimensional continuous network suggests that the polymeric reticulated structure is a stereoscopic mesh structural material. The cells have an average diameter from 1 to 50 microns (column 5, line 26). The cells have a wall thickness from 0.5 to 5 microns within the claimed range (column 5, line 25). Toyosawa does not specifically disclose the filling rate of the functional material with respect to an entire volume of the void portion of the three-dimensional continuous network. However, the polymeric reticulated structure of Toyosawa is structurally the same as the eraser of the present invention. Toyosawa uses the same technique for filling the functional material into the voids of the three-dimensional continuous network as Applicants (column 10, lines 41-47). Therefore, it is examiner's position

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that the filling rate of the functional material would be inherently present so as to enable the polymeric reticulated structure obtained which is structurally the same as the eraser as presently claimed. Although Toyosawa fails to teach the polymeric reticulated structure for use as an eraser, "an eraser" or "an electric-eraser" has not given patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. ***Kropa v. Robie***, 88 USPQ 478 (CCPA 1951). Toyosawa does not teach the polymeric reticulated structure exhibiting the skeletal fracture during deformation by compression.

However, it appears that the polymeric reticulated structure meets all the structural limitations and chemistry as required by the claims. The polymeric reticulated structure comprises a skeleton structure impregnated with a resin component. The skeleton structure has a skeleton portion with the wall thickness within the claimed range. The void portion of the skeleton structure has an average pore size within the claimed range. The cell has a circular cross section. The polymeric reticulated structure is a foamed structural material, a stereoscopic mesh structural material.

Therefore, it is not seen that the polymeric reticulated structure would have performed differently than the eraser of the present invention in terms of tensile strength, extension percentage, compression repulsive force, surface hardness, sticking strength, coefficient of friction, wear rate and skeletal fracture by compression. It seems from the claim, if one meets the structure recited, the

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properties must be met or Applicant's claim is incomplete. This is in line with *In re Spada*, 15 USPQ 2d 1655 (1990) which holds that products of identical chemical composition can not have mutually exclusive properties. It is the examiner's position that Toyosawa anticipates or strongly suggests the claimed subject matter.

13. Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toyosawa et al (US 5,716,997). Toyosawa does not specifically disclose the polymeric reticulated structure comprising a coloring agent. However, Toyosawa teaches the polymeric reticulated structure suitable as a toy, therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a coloring agent in the polymeric reticulated structure motivated by the desire to provide decorative effects.

Toyosawa does not specifically disclose the polymeric reticulated structure comprising a plurality of blocks of porous structural materials and each block formed into the shape of a plate. However, Toyosawa teaches the polymeric reticulated structure suitable as a construction material, therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ plurality of blocks of the polymeric reticulated structure and each block formed into the shape of a plate for higher strength and dimensional stability.

14. Claims 7, 12-21, 26, 30 and 37 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Shimizu et al (US 4,911,974). Shimizu teaches a tack-free silicone gel molding comprising a molding of a crosslinked organopolysiloxane having a partial three-dimensional network

structure which is coated with silicone rubber particles (claim 1). Likewise, the tack-free silicone gel molding comprises a skeleton structure which has a skeleton portion and a void portion wherein the void portion is filled with the silicon rubber particle. According to Applicants' specification, the resin can be applied to the porous structural material in a dispersed state, therefore, a coating of the silicone rubber particles reads on Applicants' a resin component of the elastic material. Although Shimizu fails to teach the gel molding for use as an eraser, "an eraser" or "an electric-eraser" has not given patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. ***Kropa v. Robie***, 88 USPQ 478 (CCPA 1951). Shimizu does not teach the gel molding exhibiting the skeletal fracture during deformation by compression. However, it appears that the gel molding meets all the structural limitations and chemistry as required by the claims. The gel molding comprises a skeleton structure impregnated with a rubber component. The three-dimensional network structure reads on Applicants' skeleton structure having a skeleton portion and a void portion with a pore size within the claimed range. The three-dimensional network structure also reads on Applicants' stereoscopic mesh structural material. Therefore, it is not seen that the polymeric reticulated structure would have performed differently than the eraser of the present invention in terms of tensile strength, extension percentage, compression repulsive force, surface hardness, sticking strength, coefficient of

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friction, wear rate and skeletal fracture by compression. It seems from the claim, if one meets the structure recited, the properties must be met or Applicant's claim is incomplete. This is in line with *In re Spada*, 15 USPQ 2d 1655 (1990) which holds that products of identical chemical composition can not have mutually exclusive properties. It is the examiner's position that Shimizu anticipates or strongly suggests the claimed subject matter.

15. Claims 3, 7, 11-21, 23, 26, 30, and 37 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Giez et al (US 5,366,999). Giez teaches a polyurethane foam support comprising a three-dimensional continuous skeleton impregnated with a rubber based resin (column 2, lines 30-35, column 3, lines 3-4). The three-dimensional continuous network suggests that the foam support is a stereoscopic mesh structural material. The foam support comprises a pigment particle, which reads on Applicants' coloring agent (column 4, line 12). Although Giez fails to teach the foam support suitable as an eraser, "an eraser" or "an electric-eraser" has not given patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. *Kropa v. Robie*, 88 USPQ 478 (CCPA 1951). Giez does not teach the foam support exhibiting the skeletal fracture during deformation by compression. However, it appears that the foam support meets all the structural limitations and chemistry as required by the claims. The foam support comprises a

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skeleton structure impregnated with a rubber-based resin. The skeleton structure has a skeleton portion and a void portion. The foam support is a stereoscopic mesh structural material. The foam support comprises a pigment particle. Therefore, it is not seen that the foam support would have performed differently from the eraser of the present invention in terms of tensile strength, extension percentage, compression repulsive force, surface hardness, sticking strength, coefficient of friction, wear rate and skeletal fracture by compression. It seems from the claim, if one meets the structure recited, the properties must be met or Applicant's claim is incomplete. This is in line with *In re Spada*, 15 USPQ 2d 1655 (1990) which holds that products of identical chemical composition can not have mutually exclusive properties. It is the examiner's position that Giez anticipates or strongly suggests the claimed subject matter.

16. Claims 10, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Giez et al (US 5,366,999). It is known in the art the cells of the skeleton support have a circular cross-section. Giez teaches the foam support formed into the shape of a plate (column 4, lines 1-3). Giez does not specifically disclose the foam support formed into a stack of plurality of the plates. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the foam support in the form of a stack of plurality of the plates for higher strength and dimensional stability.

17. Claims 3, 6, 7, 11-21, 26, 30 and 37 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over

Imashiro et al (US 5,413,853). Imashiro teaches a melamine resin foam comprising a foam body and a chloroprene rubber coated on the foam body (abstract). Imashiro teaches the foam body comprising a skeleton and substantially open cells. Likewise, the foam body appears to be composed of the skeleton portion and a void portion which is filled with the chloroprene rubber. It is noted that the "skeleton" itself is defined as three-dimensional network structure, therefore, Imashiro reads on Applicant's three-dimensional mesh structural material. Imashiro does not specifically disclose the filling rate of the rubber component with respect to an entire volume of the void portion of the skeleton structure. However, the melamine resin foam of Imashiro is structurally the same as the eraser of the present invention. Imashiro uses the same technique for filling the rubber component into the voids of the skeleton structure as Applicants (column 2, lines 55-65). Therefore, it is examiner's position that the filling rate of the functional material would be inherently present so as to enable the foam obtained which is structurally the same as the eraser as presently claimed. Although Imashiro fails to teach the melamine resin foam for use as an eraser, "an eraser" or "an electric-eraser" has not given patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. *Kropa v. Robie*, 88 USPQ 478 (CCPA 1951). Imashiro does not teach the melamine resin foam exhibiting the skeletal fracture during deformation by compression. However, it appears that the

melamine resin foam meets all the structural limitations and chemistry as required by the claims. The melamine resin foam comprises a skeleton structure impregnated with a rubber component. The skeleton structure has a skeleton portion and a void portion which is filled with the rubber component. The melamine resin foam is a stereoscopic mesh structural material. Therefore, it is not seen that the melamine resin foam would have performed differently than the eraser of the present invention in terms of tensile strength, extension percentage, compression repulsive force, surface hardness, sticking strength, coefficient of friction, wear rate and skeletal fracture by compression. It seems from the claim, if one meets the structure recited, the properties must be met or Applicant's claim is incomplete. This is in line with *In re Spada*, 15 USPQ 2d 1655 (1990) which holds that products of identical chemical composition can not have mutually exclusive properties. It is the examiner's position that Imashiro anticipates or strongly suggests the claimed subject matter.

18. Claims 6, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imashiro et al (US 5,413,853). Imashiro does not specifically disclose the filling rate of the chloroprene rubber coated on the surfaces of the skeleton of the melamine resin foam. However, Imashiro discloses that the amount of the chloroprene rubber can be controlled by concentration of the chloroprene rubber in the solution and the pressure of the press applied to the coated foam (column 3, lines 5-10). Likewise, such a variable would have been recognized by one skilled in the art as dependent upon the intended use of the product. As such, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time

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the invention was made to employ the chloroprene rubber with the amount instantly claimed motivated by the desire to impart the strength of the melamine resin foam.

This is in line with *In re Aller*, 105 USPQ 233 which holds that discovering the optimum or workable ranges involves only routine skill in the art.

Imashiro does not specifically disclose the melamine resin foam comprising a plurality of blocks of porous structural materials and each block formed into the shape of a plate. However, Imashiro teaches the melamine resin foam suitable as a construction material (column 1, lines 20-25). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ plurality of blocks of the melamine resin foam and each block formed into the shape of a plate for higher strength and dimensional stability.

19. Claims 9, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imashiro et al (US 5,413,853) as applied to claim 37 above, further in view of Toyosawa et al (US 5,716,997). Imashiro is silent as to an average pore size of the melamine resin foam. Toyosawa, however, teaches a polymeric reticulated structure suitable as a construction material comprising a three-dimensional continuous network having strands of the copolymer connected to define internal cells which communicate with each other, and the cells filled with a rubber component (column 5, lines 28-56, abstract and figure 1). Toyosawa teaches the cells having an average diameter from 1 to 50 microns within the claimed range (column 5, line 26). Therefore, in the absence of the unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention

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was made to employ the melamine resin foam with the void portion having an average void size as taught in the Toyosawa invention motivated by the desire to control the degree of the foam porosity, thereby increasing the mechanical strength of the melamine resin foam and consequently resulting in reduction in fracture of foam skeleton.

Imashiro does not specifically disclose the void shape of the melamine resin foam. Toyosawa teaches the cells having a circular cross section as shown in figure 1. Therefore, in the absence of the unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the melamine resin foam with the void having a circular cross section because such is typical structure of the void in the three-dimensional network structure and Toyosawa provides necessary details to practice the invention of Imashiro.

20. The art rejections over Imashiro are maintained for the following reasons. Applicants argue that Imashiro teaches against filling the void portions of the melamine resin foam based on the reference disclosure at column 2, lines 34-36. The examiner disagrees. The passage does not imply the voids should not be filled as argued by Applicants. The passage simply suggests that the foam must be substantially free of close cells. It would be technically difficult for the hydrophobic component to be incorporated into the interior of the foam which has the close cell structure.

21. Claim 22 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Noboru (JP 08-258493). Noboru teaches an eraser comprising an elastic material for erasing, and an inorganic skeleton

structure. The skeleton structure comprises a skeleton portion and a void portion which is filled with the elastic material (abstract). According to Applicants' specification, the skeleton structure of the eraser can be made of a material other than an organic polymer. Therefore, the presently claimed subject matter does not exclude Norboru. It is the examiner's position that the surface hardness, sticking strength, coefficient of friction and wear rate would be inherently present because this is in line with *Ex parte Tummers et al.* 137 USPQ 444 which holds that if the chemical composition of the claimed article of manufacture recited in the claims is the same as the identical structure of the prior art, it is immaterial that the applicant recognized different advantages flowing therefrom than did the prior art.

Conclusion

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485. The examiner can normally be reached on M,T,Th, F, 7:00-4:30 and on alternating Wednesdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HV

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